

### Lighting it Up KS2 Workshop

#### Curriculum Links

<p><b>Please note:</b></p>	<p>Our workshops may not cover all of the links below in great depth as we are restricted by time, however you have the opportunity to cover them in the follow up activities you will be receiving from us.</p>	
<p><b>Aims and Activities taken from the workshop booklet</b></p>	<p>This exciting and practical electrical workshop allows pupils to connect and investigate simple circuits incorporating a range of electrical components and then draw diagrams using symbols.</p> <p>The children use a range of tools and equipment necessary for circuit building and enhance their making skills in producing an electrical quiz game. The workshop is best done in a large classroom.</p> <p>The aim of this workshop is to give your children the opportunity to extend their knowledge and understanding of electrical circuits and the various components used. We show an example of the game to be made and demonstrate the safe use of the tools needed for this activity. Children are encouraged to measure accurately and use tools correctly. Each child will succeed in making their own electrical quiz game, which they keep. After the workshop takes place the teacher can extend learning by having the pupils add their own questions and answers making it their very own quiz game.</p>	
	<p><b>National Curriculum</b></p>	<p><b>Non-Statutory Opportunities</b></p>
<p><b>Science</b></p>	<p><b>Working Scientifically (LKS2/UKS2):</b></p> <ul style="list-style-type: none"> <li>• Asking relevant questions and using different types of scientific enquiries to answer them; <a href="#">planning different types of scientific enquiries to answer questions</a></li> <li>• Setting up simple practical enquiries, comparative and fair tests; <a href="#">recognising and controlling variables where necessary</a></li> <li>• Make systematic and careful observations take accurate measurements using standard units; <a href="#">using a range of scientific equipment with increasing accuracy and precision, taking repeat readings where appropriate</a></li> <li>• Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>• Recording simple findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables; <a href="#">recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</a></li> <li>• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; <a href="#">reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degrees of trust in results, in oral and written forms such as displays and other presentations</a></li> <li>• Using results to draw simple conclusions, make predictions for new values, suggest improvements</li> </ul>	<p>Pupils will have the opportunity to:</p> <ul style="list-style-type: none"> <li>- investigate the components of a circuit through practical activities, including making predictions and observations about what happens when components in the circuit are changed</li> </ul>

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	<p>and raise further questions; <i>using test results to set up further comparative and fair tests</i></p> <ul style="list-style-type: none"> <li>Identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>Using straightforward scientific evidence to answer questions or to support their findings; <i>identifying scientific evidence that has been used to support or refute ideas or arguments</i></li> </ul> <p><b>Electricity (Y4)</b></p> <ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul> <p><b>Electricity (Y6)</b></p> <ul style="list-style-type: none"> <li>associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</li> <li>use recognised symbols when representing a simple circuit in a diagram</li> </ul>	
<p><b>DT</b></p>	<p><b>Design</b></p> <ul style="list-style-type: none"> <li>use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> </ul> <p><b>Evaluate</b></p>	<p><b>Build their own working electrical quiz based on specific design criteria</b></p>

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	<ul style="list-style-type: none"> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul> <p>Technical knowledge</p> <ul style="list-style-type: none"> <li>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> </ul>	
<b>Maths</b>	<p><b>Measurement:</b> measure, compare, add and subtract: lengths (m/cm/mm) (Y3); estimate, compare and calculate different measures (Y4); use, read, write and convert between standard units, converting measurements of length from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places (Y6)</p>	Opportunity here for pupils to develop accurate measuring skills through practical work
<b>English</b>	<ul style="list-style-type: none"> <li>ask relevant questions to extend their understanding and knowledge</li> <li>articulate and justify answers, arguments and opinions</li> <li>developing a broader, deeper and richer vocabulary</li> </ul>	